AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Lucent Technologies, Inc.
1600 Osgood Street
North Andover, Massachusetts 01845

is authorized to discharge from a facility located at

1600 Osgood Street
North Andover, Massachusetts 01845

to the receiving water named the Merrimack River, a class B water, in accordance with effluent limitations, monitoring requirements, and other conditions set forth herein.

This permit shall become effective thirty (30) days after the date of signature**.**

This permit and the authorization to discharge expire at midnight, four (4) years from the effective date.

This permit supersedes the permit issued on September 28, 1990 and modified on March 4, 1992.

This permit consists of 10 pages in Part I including effluent limitations, monitoring requirements, Attachment A, Freshwater Acute Toxicity Test Protocol and Procedures; Sludge Guidance; and 35 pages in Part II including General Conditions and Definitions.

Signed this 2nd day of July, 2002

Signature on File

Linda M. Murphy, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Director
Division of Watershed Management
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration*, the permittee is authorized to discharge treated sanitary effluent from outfall serial number **001B**. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[1]
Flow	MGD	0.2	----	0.3	Continuous	Recorder[2]
BOD_5	mg/l	30	45	Report	1/Week	24-Hour Composite[3]
TSS	mg/l	30	45	Report	1/Week	24-Hour Composite[3]
pH[4]	s.u.	See Condition I.A.5.b. on Page 6			1/Week	Grab
Total Residual Chlorine [4,5]	mg/l	----	----	1.0	1/Week	Grab
Fecal Coliform Bacteria [4,6]	#/100 ml	200	----	400	1/Week	Grab
LC_{50} [7]	%	----	----	$\geq$50	2/year[8]	24-Hour Composite[3]

Effluent samples shall be taken after appropriate treatment and prior to discharge to Outfall 001.

* The permittee is currently not discharging sanitary wastewater from its facility. Its sanitary flow is directed to the Greater Lawrence Sanitary District (GLSD) treatment plant by means of a sewer line through a short term license. The permittee anticipates getting authorization to use a sewer line on a long term basis. Until such time, there is the possibility that this sanitary discharge may need to be resumed temporarily. When the long term tie in to GLSD is authorized and completed, the permittee shall notify the EPA and DEP and the authorization to discharge this sanitary wastewater from Outfall 001B will be terminated.

See Page 5 for footnotes.

2. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent of a groundwater remediation system from outfall serial number **001E**. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency[9]	Sample Type[1]
Flow	GPM	250	----	360	2/Month	Calculated
Volatile Organics Compounds [10]	mg/l	Report	-----	Report	1/Month	Grab
pH	s.u.	See Condition I.A.5.b. on Page 6			1/Month	Grab

3. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge treated effluent of a groundwater remediation system from outfall serial number **002C**. Such discharge shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency [9]	Sample Type[1]
Flow	GPM	----	----	50	2/Month	Calculated
Volatile Organic Compounds [10]	mg/l	Report	-----	Report	1/Month	Grab
pH	s.u.	See Condition I.A.5.b. on Page 6			1/Month	Grab

See Page 5 for footnotes.

4. During the period beginning the effective date and lasting through expiration*, the permittee is authorized to discharge non-contact cooling water (air conditioning system) blowdown, chiller water blowdown and condensate from outfall serial number **002A**. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Units	Discharge Limitation			Monitoring Requirement	
		Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[1]
Flow	MGD	0.050	-----	0.075	Continuous	Recorder[2]
Copper, Total	mg/l	Report	-----	Report	2/Month	24 Hour Composite[3]
Chromium, Total	mg/l	Report	-----	Report	2/Month	24 Hour Composite[3]
pH	s.u.	See Condition I.A.5.b. on Page 6			2/Month	Grab
Total Residual Chlorine[4,5]	mg/l	----	----	0.5	2/Month	Grab
Temperature	^{0}F	----	----	Report	2/Month	Grab
Phosphate	mg/l	Report	----	Report	2/Month	24 Hour Composite[3]

Effluent samples shall be taken after appropriate treatment and prior to discharge to Outfall 002.

The permittee currently uses three chemicals in its non-contact cooling water system (NCCW) for corrosion control and to discourage biological growth. Information about these chemicals may be found in the permit file. If the permittee decides to use any other chemicals in its NCCW system, it shall notify the EPA and DEP in writing and include information (Material Safety Data Sheets) for these chemicals and proposed dosages.

* The permittee is currently discharging these to GLSD's treatment plant by means of a sewer line through a short term license. The permittee anticipates getting authorization to use a sewer line on a long term basis. Until such time, there is the possibility that this sanitary discharge may need to be resumed temporarily. When the long term tie in to GLSD is authorized and completed, the permittee shall notify the EPA and DEP and the authorization to discharge these blowdown waters from Outfall 002A will be terminated.

See Page 5 for footnotes.

Footnotes:

1. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR §136. All samples shall be 24 hour composites unless specified as a grab sample in 40 CFR §136.

2. For flow, report the maximum daily rate and average flow for the month.

3. A 24-hour composite sample will consist of at least twenty four (24) grab samples taken during a 24 hour period (e.g. 7:00 A.M. Monday to 7:00 A.M. Tuesday).

4. Required for State Certification.

5. The minimum level (ML) for total residual chlorine is defined as 50 ug/l. This value is the minimum level for chlorine using EPA approved methods found in the most currently approved version of Standard Methods for the Examination of Water and Wastes, Method 4500 CL-E and G, or USEPA Manual of Methods of Analysis of Water and Wastes, Method 330.5. One of these methods must be used to determine total residual chlorine. Sample results of 50 ug/l or less shall be reported as zero on the discharge monitoring report.

6. Fecal coliform monitoring will be conducted year round. This is also a State certification requirement. Fecal coliform discharges shall not exceed a monthly geometric mean of 200 colony forming units per 100 ml, nor shall they exceed 400 cfu per 100 ml as a daily maximum. This monitoring shall be conducted concurrently with the sampling for total residual chlorine.

7. The LC_{50} is the concentration of effluent which causes mortality to 50% of the test organisms. Therefore, a 100% limit means that a sample of 100% effluent (no dilution) shall cause no more than a 50% mortality rate.

8. The permittee shall conduct two acute toxicity tests per year. The chronic test may be used to calculate the acute LC_{50} at the 48 hour exposure interval. The permittee shall test the daphnid, Ceriodaphnia dubia and the fathead minnow, Pimephales promelas. Toxicity test samples shall be collected on the second week of February and July. Results are to be submitted by the 30th day of the month following the sample i.e. March and August. See Permit **Attachment A**, Toxicity Test Procedure and Protocol. After submitting **one year** and a **minimum** of two consecutive sets of WET test results, all of which demonstrate compliance with the WET permit limits, the permittee may request a reduction in the WET testing requirements. The permittee is required to continue testing at the frequency specified in the permit until notice is received by certified mail from the EPA that the WET testing requirement has been changed. This testing is required only when there is a discharge from this outfall.

9. These outfalls shall be sampled for the months that the remediation systems are in use and there is a discharge.

10.Test Method 8260 shall be used for volatile organic compounds monitoring for discharges from Outfalls 001E and 002C.

Part I.A.5.

a. The discharge shall not cause a violation of the water quality standards of the receiving waters.

b. The pH of the effluent shall not be less than 6.5 nor greater than 8.3 at any time, unless these values are exceeded as a result of an approved treatment process. The permittee shall report the range of 4 daily grab samples for the testing frequency required.

c. The discharge shall not cause objectionable discoloration of the receiving waters.

d. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

e. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

f. The results of sampling for any parameter above its required frequency must also be reported.

6. Toxics Control

a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

7. Numerical Effluent Limitations for Toxicants

EPA or DEP may use the results of the toxicity tests and chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

8. Alternate Power Source

In order to maintain compliance with the terms and conditions of this permit, the permittee shall continue to provide an alternative power source with which to sufficiently operate its treatment works (as defined at 40 CFR §122.2).

9. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a

routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or

(4) Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels:"

(1) Five hundred micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony;

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or

(4) Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

10. This permit may be modified, or revoked and reissued, on the basis of new information in accordance with 40 CFR §122.62.

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls listed in Part I A.1. of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs) are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements (Part II) of this permit (Twenty-four hour reporting).

C. SLUDGE CONDITIONS

1. The permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices and with the CWA Section 405(d) technical standards. These conditions will apply only if the permittee resumes operation of its on site sanitary wastewater treatment system which results in the generation of sludge.

2. The permittee shall comply with the more stringent of either the state or federal (40 CFR part 503), requirements.

3. The requirements and technical standards of 40 CFR part 503 apply to facilities which perform one or more of the following use or disposal practices.

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge only landfill

   c. Sewage sludge incineration in a sludge only incinerator

4. The 40 CFR part 503 conditions do not apply to facilities which place sludge within a municipal solid waste landfill. These conditions also do not apply to facilities which do not dispose of sewage sludge during the life of the permit but rather treat the sludge (lagoons- reed beds), or are otherwise excluded under 40 CFR 503.6.

5. The permittee shall use and comply with the attached compliance guidance document to determine appropriate conditions. Appropriate conditions contain the following elements.

   - General requirements
   - Pollutant limitations
   - Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)
   - Management practices
   - Record keeping
   - Monitoring
   - Reporting

   Depending upon the quality of material produced by a facility, all conditions may not apply to the facility.

6. The permittee shall monitor the pollutant concentrations, pathogen reduction and vector attraction reduction at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year

less than 290	1/ year
290 to less than1500	1 /quarter
1500 to less than 15000	6 /year
15000 +	1 /month

7. The permittee shall sample the sewage sludge using the procedures detailed in 40 CFR 503.8.

8. The permittee shall submit an annual report containing the information specified in the guidance by February 19. Reports shall be submitted to the address contained in the reporting section of the permit. Sludge monitoring is not required by the permittee when the permittee is not responsible for the ultimate sludge disposal. The permittee must be assured that any third party contractor is in compliance with appropriate regulatory requirements. In such case, the permittee is required only to submit an annual report by February 19 containing the following information:

   - Name and address of contractor responsible for sludge disposal
   - Quantity of sludge in dry metric tons removed from the facility by the sludge contractor

D. MONITORING AND REPORTING

1. Reporting

Monitoring results obtained during each calendar month shall be summarized and reported on Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the following month.

Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency is:

Massachusetts Department of Environmental Protection
Bureau of Resource Protection
Northeast Regional Office
205A Lowell Street
Wilmington, MA 01887

Signed and dated Discharge Monitoring Report Forms and toxicity test reports required by this permit shall also be submitted to the State at:

Massachusetts Department of Environmental Protection
Division of Watershed Management
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

E. STATE PERMIT CONDITIONS

This discharge permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) under Federal and State law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MA DEP pursuant to M.G.L. Chap.21, §43.

Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.